REMARKS AND ARGUMENTS

The present application includes claims 1-25. Claims 1-25 were rejected in the May 3, 2004 Office Action. Claims 1, 11 and 21 have been amended.

Claims 1 and 21 are amended to recite retrieving from a PACS database, using a PACS display workstation, raw image data, which has not been fully preprocessed according to a predetermined subset of preprocessing functions applied to the raw image data at an acquisition workstation, delivered from an imaging modality.

Claims 1 and 21 are also amended to recite selecting from a PACS database, using the PACS display workstation, a first preprocessing function for the raw image data, which has not been fully preprocessed according to said predetermined subset of preprocessing functions applied at said acquisition workstation, delivered from the imaging modality, where the first preprocessing function is stored in the PACS database, the first preprocessing function differing from the predetermined subset of preprocessing functions applied to the raw image data at the acquisition workstation.

Claims 1, 11 and 21 are also amended to recite processing the raw image data, which has not been fully preprocessed according to the predetermined subset of preprocessing functions applied at the acquisition workstation, at the PACS display workstation by applying the first preprocessing function to the raw image data to create resultant image data.

Claim 11 is also amended to recite retrieving from a PACS database raw image data, which has not been fully preprocessed according to a predetermined subset of preprocessing functions applied to the raw image data at an acquisition workstation, delivered from an imaging modality.

Claim 11 is also amended to recite selecting from a PACS database a first preprocessing function for the raw image data, which has not been fully preprocessed according to the predetermined subset of preprocessing functions applied at the acquisition workstation, delivered from the imaging modality, where the first preprocessing function is stored in the PACS database and the first preprocessing function differs from the predetermined subset of preprocessing functions.

Claim 21 is also amended to recite retrieving from a PACS database raw image data, which has not been fully preprocessed according to a predetermined subset of preprocessing functions applied to the raw image data at an acquisition workstation, delivered from an imaging modality, where the first preprocessing function is stored in said PACS database and the first preprocessing function differs from the predetermined subset of preprocessing functions.

Claims 1-25 were rejected under 35 U.S.C. § 112, ¶1 as failing to comply with the written description requirement.

Claims 1, 8-9, 11, 12 and 19-21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Huang, "PACS Basic Principles and Applications."

Claims 2-4, 6, 13-15, 17, 22 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang and Takeo et al. (U.S. Patent No. 6, 231,246).

Claims 5, 7, 16, 18, 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang and Takeo, further in view of Vuylsteke (U.S. Patent No. 5,644,662).

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang and Wofford (U.S. Patent No. 5,542,003).

Rejections under 35 U.S.C. § 112, ¶ 1

The Applicant first turns to the rejection of claims 1-25 under 35 U.S.C. § 112, ¶1 as failing to comply with the written description requirement. The Applicant has amended claims 1, 11 and 21. The Applicant respectfully submits that the amended claims 1, 11 and 21, and corresponding dependent claims 2-10, 12-20 and 22-25 comply with the written description requirement as the claims contain subject matter described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Applicant respectfully submits that claims 1-25 are clearly supported throughout the specification, including for example, page 3, lines 25-28 to page 4, line 1 and page 5, lines 8-19.

Thus, the Applicant respectfully submits that claims 1-25 satisfy the written description requirement of 35 U.S.C. § 112, ¶ 1.

Rejections under 35 U.S.C. § 102(b)

The Applicant next turns to the rejection of claims 1, 8-9, 11, 12 and 19-21 under 35 U.S.C. § 102(b) as being anticipated by Huang. As set forth in previous Amendments, Huang discloses a picture archiving and communication system ("PACS") that consists of image and data acquisition, a PACS controller and archive and display subsystems (Huang, Ch. 7.1). The image and data are generated by an imaging modality (Huang, Ch. 8.2). An acquisition gateway computer acquires the image and data from the imaging modality (Huang, Ch. 8.2). The display subsystems display the received images (Huang, Table 7.2). Huang also describes the generation and storage of a lookup table into an image header of image data at an acquisition gateway computer and then the application of the same lookup table at a workstation at the time of display (Huang, Ch. 8.7.1.4).

The Applicant respectfully disagrees with the Examiner's assertion that "the raw image data [of Huang] is considered as not haven been fully preprocessed according to a predetermined set of preprocessing functions, since it is only partially preprocessed . . . and is sent to the workstation for further preprocessing . . ." (May 3, 2004 Final Office Action, page 4). In addition, the Applicant respectfully disagrees with the Examiner's assertion that Huang teaches the further preprocessing of the image data at the workstation by applying lookup tables at the time of display, which occurs at the workstations (May 3, 2004 Final Office Action, page 5).

As set forth above, Huang merely describes the processing of image data by 1) storing a lookup table in the image data at an acquisition gateway computer and 2)

applying the same lookup table at the time of display of the image data at a workstation. Huang therefore cannot and does not teach any system or method whereby raw image data is received by an acquisition computer, the acquisition computer applies a subset of preprocessing functions to the raw image data, and a workstation then processes the same image data by applying a different preprocessing function to the image data, as recited in claims 1, 11 and 21. Therefore, the Applicant respectfully submits that Huang cannot teach elements of the claimed invention.

The present rejection encompasses 1, 8-9, 11, 12 and 19-21. Claims 1, 11 and 21 have been amended to clearly recite limitations previously submitted as not taught by Huang. Claims 8-9, 12 and 19-20 depend from claims 1, 11 and 21. Therefore, the Applicant respectfully submits that claims 1, 8-9, 11, 12 and 19-21 should be allowable.

Rejections under 35 U.S.C. § 103(a)

The Applicant next turns to the rejection of claims 2-4, 6, 13-15, 17, 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over Huang and Takeo. Takeo describes a method and apparatus for reproducing an image via two image reproducing devices wherein gradation and/or sharpness correction is performed for both images reproducing devices.

However, Takeo does not overcome the shortcomings of Huang, as described above. Specifically, Takeo does not teach the application of a subset of preprocessing functions at an acquisition gateway computer, followed by the application of a different

preprocessing function at a workstation, as recited in claims 1, 11 and 21. Takeo instead describes the complete and full processing of image data at an image processing means for two differing outputs (namely, a CRT display device and a laser printer) before sending the fully processed image data to the display device (for display) and to the laser printer (for reproduction) (col. 6, lines 32-49). In this way, Takeo merely describes the application of all processing functions at a single location, namely the image processing means 1 of FIG. 1 (col. 6, lines 37-41). Takeo is therefore incapable of teaching or suggesting the application of a subset of preprocessing functions to image data at an acquisition computer followed by the application of a different preprocessing function at a display workstation, as recited in claims 1, 11 and 21. Thus, the Applicant respectfully submits that Takeo also fails to teach or suggest elements of the present claims.

Moreover, a combination of Huang and Takeo would similarly fail to teach or suggest elements of the present claims. As described above, neither Huang nor Takeo teach or suggest the application of a subset of preprocessing functions to image data at an acquisition computer followed by the application of a different preprocessing function at a display workstation, as described in claims 1, 11 and 21. Therefore, the Applicant respectfully submits that a combination of Huang and Takeo does not teach or suggest elements of the present claims.

The present rejection encompasses claims 2-4, 6, 13-15, 17, 22 and 23. Claims 1, 11 and 21 have been amended to more clearly recite limitations previously submitted as not taught or suggested by Huang or Takeo, alone or in combination. Claims 2-4, 6, 13-

15, 17, 22 and 23 depend from claims 1, 11 and 21. Therefore, the Applicant respectfully submits that claims 2-4, 6, 13-15, 17, 22 and 23 should be allowable.

The Applicant next turns to the rejection of claims 5, 7, 16, 18, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Huang and Takeo, further in view of Vuylsteke. Vulysteke describes multiple processing of radiographic images based on a pyramidal image decomposition.

However, Vulysteke does not overcome the shortcomings of either Huang or Takeo, as described above. Specifically, as stated in the January 30, 2004 Amendment, Vulysteke merely describes the iterative decomposition of an image into multiple levels of lower resolution, the processing of the image, then applying the inverse of the transform that decomposed the original image (col. 3, lines 1-22, 52-68; col. 4, lines 1-12). Vulysteke does not describe any additional processing of the image data other than the singular processing that occurs after the image has been iteratively decomposed (col. 3, lines 1-22, 52-68; col. 4, lines 1-12). Therefore, Vulysteke is incapable of teaching or suggesting the application of a subset of preprocessing functions to image data at an acquisition computer and a different preprocessing function applied to the image data at a display workstation, as recited in claims 1, 11 and 21. Thus, the Applicant respectfully submits that Vulysteke also fails to teach or suggest elements of the present claims.

Moreover, a combination of Huang, Takeo and Vulysteke similarly fails to teach or suggest elements of the present claims. As described above, none of Huang, Takeo

and Vulysteke teach or suggest the application of a subset of preprocessing functions to image data at an acquisition computer followed by the application of a different preprocessing function at a display workstation, as described in claims 1, 11 and 21. Therefore, the Applicant respectfully submits that a combination of Huang, Takeo and Vulysteke does not teach or suggest elements of the present claims.

The present rejection encompasses claims 5, 7, 16, 18, 24 and 25. Claims 1, 11 and 21 have been amended to more clearly recite limitations previously submitted as not taught or suggested by Huang, Takeo or Vulysteke, alone or in combination. Claims 5, 7, 16, 18, 24 and 25 depend from claims 1, 11 and 21. Therefore, the Applicant respectfully submits that claims 5, 7, 16, 18, 24 and 25 should be allowable.

The Applicant next turns to the rejection of claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Huang and Wofford. Wofford describes a method for maximizing fidelity and dynamic range for a region of interest ("ROI") within digitized medical image display. However, Wofford does not overcome the shortcomings of Huang, as described above. Specifically, the entire invention of Wofford, including all processing of data, occurs at a display workstation (col. 4, lines 53-61). In this way, as no processing occurs at an acquisition gateway computer, Wofford is therefore incapable of describing the application of a subset of preprocessing functions to image data at an acquisition computer and a different preprocessing function to the image data at a display

workstation, as recited in claim 1. Thus, the Applicant respectfully submits that Wofford is incapable of teaching or suggesting elements of the claimed invention.

Moreover, a combination of Wofford and Huang similarly fails to teach or suggest elements of the present claims. As described above, neither of Huang and Wofford teach or suggest the application of a subset of preprocessing functions to image data at an acquisition computer followed by the application of a different preprocessing function at a display workstation, as described in claim 1. Therefore, the Applicant respectfully submits that a combination of Wofford and Huang does not teach or suggest elements of the present claims.

The present rejection encompasses claim 10. Claim 1 has been amended to more clearly recite limitations previously submitted as not taught or suggested by Huang or Wofford, alone or in combination. Claim 10 depends from claim 1. Therefore, the Applicant respectfully submits that claim 10 should be allowable.

Therefore, the Applicant respectfully submits that the claims of the present application should be allowable over the prior art.

CONCLUSION

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of GTC, Account No. 07-0845.

Respectfully submitted,

Date: August 16, 2004

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